

REMARKS

STATUS OF CLAIMS

Claims 1-22 are pending.

Claims 3 and 13-15 are rejected under 35 USC 112, first paragraph, for not being enabled.

Claims 1, 2, 4, 6, 7, 9, 10, 12, 16 and 17 are rejected under 35 USC 103(a) as being unpatentable over Madonna (US Patent No. 5,737,320). The Examiner also appears to reject the same claims on page 3 of the Office Action under 35 USC 102(b) over Madonna.

Claims 8 and 11 are rejected under 35 USC 103(a) as being unpatentable over Madonna in view of Ching (US Patent No. 4,665,514).

Claims 19-22 are allowed.

Claims 5 and 18 are objected to as being allowable if amended into independent form including all of the limitations of the claims from which they depend.

Claims 1-3, 5-18 are amended, new claims 23 and 24 are added, and thus, claims 1-24 remain pending for reconsideration, which is respectfully requested.

No new matter has been added in this Amendment. The foregoing rejections are hereby traversed.

35 USC 112, FIRST PARAGRAPH, REJECTIONS

The Examiner rejects claims 3 and 13-15 under 35 USC 112, first paragraph, for allegedly not enabled. However, claims 3 and 13-15 are amended to improve the recitation of the present invention as supported, for example, on page 13, line 5 to page 14, line 23 of the present Application. Therefore, withdrawal of the rejection of claims 3 and 13-15 is respectfully requested.

35 USC 103 REJECTIONS

PRIOR ART

Madonna

The Examiner relies on Madonna for rejecting the independent claims 1, 9, 10, 12, 13, and 16. Madonna discloses a plurality of nodes including a first node, a second node, and a third node which are connected in a ring form (FIGS. 1A-1D). The first node transmits an

empty packet to the second node. The second node writes data to the packet and transmits the packet to the third node. The third node writes data to the packet and transmits the packet to the next node. After circulating the nodes, the packet returns to the first node with a "full payload" to the node from which it originated. Therefore, in Madonna, the nodes must be connected in a ring form. In particular, Madonna discloses the Empty Send/Full Return (ESFR) and the Full Send/Empty Return (FSER) methods. See, Madonna, column 3, line 58 to column 4, line 13.

The independent claims 1, 9, 10, 12, 13, and 16 are amended to emphasize the patentably distinguishing features of the present invention. New claims 23 and 24 provide an alternative recitation of the present invention. Support for the new claim 23 and 24 can be found, for example, in FIG. 3 and description thereof in the present Application according to the present invention.

First, in contrast to Madonna, nodes of the present invention are not connected in a ring form. The nodes of the present invention are connected, for example, serially or in a star form as recited in the amended independent claims 1, 10, 13, 16 and new claims 23 and 24. Therefore, according to the present invention, for example, blank write packets are transferred at every predetermined cycle to other nodes and the other nodes transfer data in the write packet addressed to other nodes. Second, in contrast to Madonna, in the present invention a write packet is transferred from the first node to the second node, and the second node stores data addressed to the third node in the received write packet. In Madonna, the nodes store data in a received packet depending upon whether the node has data addressed to the node that originated the received packet, thereby requiring a ring network configuration.

The Examiner appears to assert on page 3 of the Office Action, that it would be obvious to combine Madonna's ESFR and FSER to achieve the present claimed invention. However, nowhere in Madonna there is a discussion of combining ESFR and FSER. For example, Madonna's column 13, line 65, discloses that one of the two methods may be used. Even if both of Madonna's ESFR and FSER are used, these methods rely on return packets to the originating node, which is a ring characteristic. Madonna's FSER provides that a node originates a full data packet destined for other nodes which extract the data until the packet returns to the originating node empty. Therefore, Madonna does not disclose or suggest the recitation, "storing data addressed to the third node in the write packet at the second node" in a non-ring networked nodes configuration (claim 1). A benefit of the claimed invention in a non-ring network is that different packets may be transferred simultaneously to respective

destination nodes (see also, claim 13; and page 14, lines 19-24 and page 13, lines 26-34, with respect to packets ab and ef simultaneously transferred via the write packets transmitted by node C1 to A1, D1, and E1 in FIG. 1).

Therefore, independent claims 1, 10, 13, 16, 23, and 24 are also allowable. In particular, in contrast to Madonna, the present invention as recited in independent claims 1, 10, 13, 16, 23 and 24, using the recitation of claim 1 as an example, recites:

1. (CURRENTLY AMENDED) A method of transferring packets between a plurality of nodes including a first node, a second node, and a third node connected by a bus but not connected in a ring form, the method comprising:

- transferring a write packet from the first node to the second node;
- storing data addressed to the third node in the write packet at the second node; and
- transferring the write packet from the second node to the third node (emphasis added).

Support for the claims can be found, for example, in page 12, line 3 to page 14, line 23; and FIGS. 5 and 8, of the present Application.

In contrast to Madonna, independent claims 9 and 12, using the recitation of claim 9 as an example, recites,

9. (CURRENTLY AMENDED) A method of transferring packets between a plurality of connected nodes including a first node, a second node, and a third node, the first node, the second node, and the third node not connected in a ring form, the method comprising:

- transferring a first packet storing first data from the first node to the second node;
- processing the first data stored in the first packet and temporarily storing the processed first data at the second node;
- transferring a second packet storing second data from the first node to the second node;
- rewriting the second data stored in the second packet with the processed and temporarily stored first data at the second node; and
- transferring the second packet including the processed first data to the third node.

Support for claims 9 and 12 can be found, for example, in page 21, line 9 to page 22, line 25 of the present Application. The Examiner on page 4, item 7 of the Office Action appears to assert that claim 9 relates to rewriting the current data according to data time sensitivity.

However, the present invention as recited in claim 9 provides the advantage of completing two transfers in one cycle (page 22, lines 16-25 of the present Application). Claim 9 is amended to improve form accordingly to recite, "transferring the second packet including the processed first data to the third node." Therefore, at least independent claims 9 and 12 are allowable.

In contrast to Madonna, the present invention as recited in new claims 23 and 24, using the recitation of new claim 23 as an example, provides:

23. (NEW) A method of transferring packets between a plurality of nodes connected in a star form, the plurality of nodes including a first node, a second node, and a third node, the method comprising:

transferring a write packet from the first node to the second node;

storing data addressed to the third node in the write packet at the second node; and

transferring the write packet from the second node to the third node (emphasis added).

Support for the new claim 23 and 24 can be found, for example, in FIG. 3 and description thereof in the present Application according to the present invention.

Ching

The Examiner relies on Ching for rejecting dependent claims 8 and 11, which recite the feature of packet padding. Ching discloses packet padding. However, dependent claim 8 and 11 are at least patentably distinguishing due to their dependencies from independent claims 1 and 10.


CONCLUSION

In view of the claim amendments and the remarks, withdrawal of the rejections of claims 1-4 and 6-17 and allowance of claims 1-4, 6-17 and 23-24 are respectfully requested.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,
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